

10 Little Jubbs Rd  
Malabar Hill  
Bombay.

10. Nov. 1938.

Dear Professor Madhava Rao,

Thank you for your kind letter  
of the 7<sup>th</sup>. I am afraid that I have no  
reprints with me here in India at all,  
and therefore cannot send you any. They  
are all in Cambridge.

I shall try and send you  
the Solway reports soon, but they are  
rather bulky and it might be a few days  
before I get them suitably packed.

My coming to Bangalore has not been  
finally settled by the Council yet, but ~~it~~  
should it be passed, I expect to be in  
Bangalore for a couple of months from the



beginning of January.

In the meantime I would like to draw your attention to the following problem and ask you to let me know if you would care to collaborate with me on it. The problem is to calculate the "Compton effect" of  $\pi$ -rays on charged mesons. The interaction of mesons with electromagnetic radiation is given in my paper. This problem is rather important for by the Weissaker method, it is directly connected with the Bremsstrahlung. I had put a research student in Cambridge onto the latter problem, and now A.H. Woods is helping him. But it is extremely complicated. Moreover, the Weissaker method gives one more physical insight into the problem. So it would be very interesting to know the Compton effect. Could you



perhaps study this problem and start working on it. I am at the moment still engaged

in the spinning <sup>particle</sup> ~~electron~~. I have now reason to believe that it is wrong to describe protons by the Dirac equation as far as nuclear theory is concerned.

Returning to the Compton effect, it should be noted that a contribution comes

1) by a second order process from the terms containing  $e$  of expression (5-5') of my paper, and

2) by a first-order process from the terms containing  $e^2$  <sup>(55)</sup> of this paper.

2) I have heard from America that some pupils of Oppenheimer have tried <sup>the Born-Strömgren</sup> ~~this~~

problem and find that the radiation loss.

increases as  $E^2$  ( $E$  energy of meson) whereas

for Dirac particles it increases as  $E$ .



Our Compton effect would give an insight  
into this, and show why this happens  
(if it is true) but this might be  
crucial for the meson theory in confirming  
or refuting it.

With kind regards

Yr sincerely  
H. J. Bhabha





9  
F/1417  
20.9.38  
DEPARTMENT OF NATURAL PHILOSOPHY  
THE UNIVERSITY  
DRUMMOND STREET  
EDINBURGH

84, George Loan ..... 7 Sept ..... 1938

Dear Madhava Rao,

Replying your letter from 16<sup>th</sup> July I wish to tell you that I should like very much to send a contribution to the jubilee volume of the "Proceedings" for Raman's 50<sup>th</sup> birthday. But I am afraid, your invitation came much too late. I think such invitations ought to be sent out at least a year or lead so that the scientists concerned have time to write a good article. Concerning myself, I have not worked recently on scattering or Raman effect. I was busy until now with some urgent work.



and to-morrow I am going with my wife for a short holiday. When I come back, end of this month, the new term starts immediately, and I am rather doubtful whether I could write even a short article if I had something to write about. But I have made one attempt: I have asked Dr. Kemmer to collaborate with me in applying my reciprocity idea to some 2<sup>nd</sup> order scattering effects. If he can manage to get some results, we shall write a short article together and send it to you. It is, however, quite uncertain that we shall succeed. In this case I shall write perhaps a few congratulating lines, to be printed in the festival number.

With kind regards, also from my wife,

Yours sincerely

M. Born.





DEPARTMENT OF NATURAL PHILOSOPHY  
THE UNIVERSITY  
DRUMMOND STREET  
EDINBURGH

19 Oct 38.

My dear Madhava Rao,

Many thanks for your letter from 11. Oct. 38.

Here is my contribution to the Raman number;  
I hope it is not too fantastical!

I congratulate you very heartily for your  
promotion!

I am terribly busy with lecturing and other  
things, and I have no time to write to you  
a long letter.

With kind regards from both of us to you  
and your wife

Yours sincerely



8 Little Gilt Rd  
Maddur Hill  
Bombay  
18 May 1840.

My dear Madhava Rao,

Thank you very much for ~~you~~ so  
kindly sending me a report ~~of~~ on Mukherji's Thesis.  
I have had it typed, written a report on his first  
paper, and added a summary of. I have mentioned  
in a covering note that the remarks on papers  
2-6 are due to you and that I have complete  
faith in your judgement. I think the thesis  
will have been as fairly examined as is possible  
in India. In my summary of, I state that  
the candidate's exposition is clear & concise. That  
he does not show much originality, but that  
may perhaps be due to environment. I end  
by saying that if the candidate were enabled to  
do research for some time ~~in case~~ in contact  
with an outstanding scientist in touch with the  
newest developments in physics, then he might do



work of much value. I think that is perhaps a fair estimate of the case. The other thesis I examined certainly does not deserve the award of the studentship.

My appointment to Calcutta seems to have appeared in the papers, <sup>\*</sup> but I have not heard officially from the University yet! In any case, I shall not be going there till the end of July, and intend spending about a fortnight there. I hope to come to Bangalore at the beginning of June. Bombay is terribly hot & damp. I hope B'lore is more pleasant than when I left.

Things in Europe are beginning to look serious, but I still do not believe that the Allies will lose. I hope your reading is going well. As soon as I start writing my book, I shall have a number of problems requiring work. One of them might interest you. I am having a complete rest.

With kind regards

Yours sincerely

H. Bhabha.

P.S. Will you kindly ask Mr C.V. Raman if he has got the answers for my two papers which I sent a week ago? I should also like 6 copies of the reprints of both my papers sent to me at once. (ie. without errata) I should also like the tickets to the

overruled? I should like to see it.



P.S.

About a week ago I sent the invoice  
for both my papers to Mr C. V. Ramana. I  
hope these ~~may~~<sup>will</sup> be set up at once so that  
the slips could be printed off, stuck into the  
reprints & then thus posted. I hope I won't  
have to wait till the end of the month for  
this. I ~~should like to~~ must have ~~the~~  
proofs of the invoice slips. These may be  
sent here. I will return them by return  
post after correction.

I also would like to have 6  
reprints of ~~copies~~ each of my two papers. Could these  
be despatched to me at once (i.e. without the  
invoice slips?) I should be grateful if you  
could enquire Venkateshan about this.



F. Little Gibbs Rd.  
Malabar Hill

Bombay

27 May 40.

173 Dear Madhava Rao,

I have just returned to  
the corrected proofs of  
Mr Venkatacham. Unfortunately they still  
my errata slips. As they  
require a number of corrections, they  
will not have time to send me further  
proofs, I have requested that they send  
you the corrected proofs together with  
my the typescripts of their errata slips.  
I should be very grateful if you would  
kindly do me the favour of correcting  
the same for me. I am anxious that  
no single misprint should occur in the



errata slips.

The hot and damp climate of Bombay has got me down, & I have broken out with a number of boils which have troubled me the last few days. However, they are now subsiding.

I hope your work is going well. I have got a letter from Pauli about my question as to the reduction of the Dirac equation to the Hamilton-Jacobi eq: when a  $g_{\mu\nu}$  term is present. He says he has not done this himself, but the result ought to be that of geometrical optics, giving for example, two beams in a magnetic field. I cannot see how this happens, but the problem might be worth tackling seriously.

With kindest regards

Yr very sincerely  
H. J. Bhabha



P.S. I quote Panch "The result & the  
polarisation must be similar to polarisation  
of light in the presence of a magnetic field  
(two different rays with different polarisations  
because of the Faraday effect -)." "

I shall be in Bangalore soon  
after the beginning of June.

I have been expecting to hear  
from Sir C. V. but have not done

so. Is he away? Kindly give him  
my kindest  
~~best~~ regards



Great Eastern Hotel

Calcutta

2 Dec. 1940.

Dear Madhava Rao,

While in the train I thought of a slight mistake in our calculations.

$\left| \frac{\psi(r_o|m)(m/r_o|i)}{E_i - E_m} \right|$  must be proportional to

$\frac{1}{V}$  not  $\underline{V}$  as I put down. This is because

the wave functions of the heavy particles, which we

have not given explicitly in the paper, have a

normalising factor  $\frac{1}{V}$ . Thus, your original expression

with  $\underline{V}$  was right for  $1 \rightarrow 1$ . As a result

$$dQ = \dots V^2 / l^2 d\Omega$$

and not

$$dQ = \dots \frac{1}{V^2} / l^2 d\Omega.$$

Please make these two corrections.

Thank you very much for coming to see me off. I thought Sir C. V. is conducted a bit strange at the end when he walked away. I felt he was offended about something - I don't know what. Please tell me frankly if he said



any thing to you afterwards - I shall then try & rectify  
the matter.

Do I try & get - its paper published  
in the Dec. number of the ~~Pan~~ Indian Head.  
And there must be no misprints - the time -  
not even in the language.

Thank you for your cooperation. I  
hope to see you within a couple of months.  
With best wishes

f

H. P. B. Leake

P.S. Please write to me at the Great Eastern  
Hotel & mark your letters "To A. W. L. Brown"  
till the 2<sup>nd</sup>.



THE GREAT EASTERN HOTEL LD.

TELEGRAMS  
"GREASTERN CALCUTTA"  
CODES  
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CALCUTTA 14. Dec. 194

My dear Muelhena Rao,

Thank you for the manuscript of  
our paper & the meson manuscript, as also the  
Phys. Rev. letter. I find there are some mistakes  
in the paper & I hasten to inform you of them.  
I also think that it is bad policy to have  $c=1$   
in part of the paper &  $c \neq 1$  in the rest. It is  
not even as if there  $c=1$  consistently in the  
whole of the classical section. In the corrections  
I give below, I have therefore added the

appropriate powers of  $c$ .  
p. 2. line 12 add "(cf. Heitler 1940)" after "classical theory".

p. 3 line 12, insert "constant" before  
numerical.

p. 3 line 18 let this read "for a Maxwell field by Bhabha (1940)  
and Bhabha & Corben<sup>\*</sup>, and for a meson field by  
Bhabha<sup>\*</sup> (1940c)".

p. 6. third line after (5). "intermediate" instead of "final".  
read "of the initial & intermediate states of the whole system".



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eg. 10. insert "d.s." at end.

p. 11, second line before (20), substitute "each of" for "all".  
to read "cross-section for each of the four ...".

p. 12. line 1, read "Bhabha in a recent paper (1940c)".

p. 12. line 10, insert c before  $\omega_0$ , thus "meson wave  
of frequency  $c\omega_0$  with ...".

Eq (21). " $\cos c\omega_0 t$ ".

Eq (22).  $\frac{H_0^2}{8\pi} \frac{c\omega_0}{(\omega_0^2 - k^2)^{3/2}}$

Eq (23) " $\sin c\omega_0 t$ ".

Eq (24)  $|M_1| = \frac{g_2 H_0 \sin \phi}{I c \omega_0}$

p. 13 line third line after (24), substitute "by (23) are" instead  
of "by (22) are".

eg (25) change to " $\cos \{c\omega_0 t - n \sqrt{\omega_0^2 - k^2}\}$ ".

eg (27)  $\frac{1}{8\pi} g_2^2 \frac{c\omega_0 (\omega_0^2 - k^2)^{3/2}}{n^4} [n * M_1]^2$

eg (28) }  
eg (30a) }  
eg (30b) }  
with " $c^2 I^2$ " instead of " $I$ "  
insert  $c^2$  in denominator, i.e. with  
 $\frac{c^2 \omega_0^2}{I}$  in place of  $\omega_0^2$



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3

p. 16 line 10 read "This is just  $-r/M_1 \sin^2 \psi_1$ , ..."

eg (33c) should read

$$dQ' \} = \frac{g_2^4}{4I^2} \frac{(\omega_0^2 - \kappa^2)^2}{c^2 \omega_0^2} \sin^2 \phi \sin^2 \psi_1 d\Omega$$

$$= \frac{g_2^4}{4I^2} \frac{(\omega_0^2 - \kappa^2)^2}{c^2 \omega_0^2} \cos^2 \psi_0 d\Omega$$

p. 17 line 1 substitute "(31)" for "(32)". "cos<sup>2</sup> ψ<sub>0</sub>" instead of "cos  
p. 17 line 2  
eg (33b) substitute "c<sup>2</sup> ω<sub>0</sub><sup>2</sup>" for "ω<sub>0</sub><sup>2</sup>" in denominator.

The next equation should read

$$(e.g. [r \times \psi_1]) = \dots = r/M_1 \cos \psi_1 \sin \theta.$$

The next equation

$$dQ' \{ (1/1) \rightarrow (1/1') \} = \frac{g_2^4}{4I^2} \frac{(\omega_0^2 - \kappa^2)^3}{c^2 \omega_0^2} \sin^2 \theta \sin^2 \phi \cos^2 \psi_1 d\Omega$$

Eq (34c) reads which, by (32) reduces to

$$dQ' \{ (1/1) \rightarrow (1/1') \} = \frac{g_2^4}{4I^2} \frac{(\omega_0^2 - \kappa^2)^2}{c^2 \omega_0^2} \sin^2 \theta \cos^2 \psi_0 d\Omega$$

Two lines lower read "cos<sup>2</sup> ψ<sub>0</sub> by 1/3", instead of "cos<sup>2</sup> ψ<sub>0</sub> by 1/3"

Eq (34b) }  
Eq (35) } Substitute "c<sup>2</sup> ω<sub>0</sub><sup>2</sup>" for "ω<sub>0</sub><sup>2</sup>" in denominator  
Eq (36a) }

In next line (36b) read

$$\text{Where } \alpha = 3Ic/2g_2^2$$



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p 18. fourth line after (26c)

" $E = c\hbar\omega_0$ " instead of " $E = \hbar\omega_0$ "

Eq (27). Write " $c^2\omega_0^2$ " for " $\omega_0^2$ " in denominator

p. 21 line 12 insert "the" before "quantum", to read  
"between the quantum".

p. 21 line 20, change "would only seriously go wrong due to"  
to "would only go wrong seriously due to".

p. 22 line 12. "on energy" instead of "of energy".

p. 22 line 21 "It shows ...." should not start

a new paragraph -

Insert "also", thus

"It also shows that ..."

p. 23 line 1 read "by the factor  $3(1 - 4\pi c^2/E)$  for --

p. 24. line 9, substitute "Bhabha" instead of "one of us".

p. 24 line 16, ~~under~~ first sentence "Thus on this

assumption the scattering of charged mesons shows  
complete correspondence with the classical theory, ...

in statics.



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Head of 1st of last column of Table

$$(4 g_2'^4 h^4 / 3 \mu^4 c^4 E^2) d\Omega$$

instead of  $(\frac{4}{3} g_2'^4 h^4 / \mu^4 c^4 E^2) d\Omega$



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TELEGRAMS  
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For the references, I think we should follow the Royal Society practice, which is also what I did in my previous papers in the Academy, thus

Bhabha 1938 Proc. Roy. Soc. A, 166, 501-28  
1939 *ibid* 172, 384-409.

1940a Proc. Indian Acad. Sci. A, 11, 247-267, 467

1940b *ibid* 11, 347-368, 468.

1940c Proc. Roy. Soc. A, in print.

Heitler 1940 Nature 145, 29-30.

In figure I, the angle  $\theta_0$  should be marked as  $\phi$ . Since in the text the axes are referred to as  $x, y, z$ , small letters should be used in both figures and not  $X, Y, Z$ .

I think this finishes all the errata. Please check the c factors. This you can easily do remembering that

$$g_2 = \text{charge} \times \text{length},$$

$$\omega_0 = 1/\text{length},$$

$$H = E = \sqrt{\text{energy/volume}}$$



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CALCUTTA

TELEGRAM  
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I am very keen that the printing of this  
book should be faultless. I do not mind  
its appearing in the January issue instead of  
the December issue. After all, there is no  
urgent hurry. But under all circumstances  
~~then~~ all the above corrections must be carefully  
carried out & no new ones must appear.  
You had better ask for 3 proofs.

I think the figures should be drawn  
beautifully by the Institute artist. I am writing  
to Sir C.V. to this effect. It will look  
much nicer.

I hope you are having a nice time.  
My own health has been rather bad. With  
kind regards

Yours sincerely

H. J. Bhattacharya



A Little Gibbs Rd.  
Malabar Hill

Bombay

24 Jan. 41

Dear Madhava Rao,

I am trying to catch today's  
mail. I got your proof only yesterday when it  
returned.

There are a number of corrections. Most  
important are certain mistakes on p. 13, 14 & 15  
which I have corrected. I have added a paragraph  
at the end of the paper & a line at the  
end of the summary.

The alterations in (27) makes the later  
references to this formula more intelligible.

There is one correction I have made in  
pencil. In (5) you have  $(f/\rho/m)(m/\rho/i)$   
whereas on top of p. 5 you have  $(i/\rho/m)(m/\rho/f)$ .  
Why this change? I think it should be corrected  
there and below. Alternately make formula (5) read  
 $(i/\rho/m)(m/\rho/f)$ . I leave this to you to decide.  
The other corrections must be made.



The letter in (4) is capital script - I wrote it  
(Greek theta). I should like this changed, but  
if they have no such letter, it may be left  
as it is.

I hope it is not too late to get  
the corrections <sup>otherwise the paper must be delayed till Feb. as some of</sup> through. I am afraid you will  
have to get another proof to make sure they  
have committed no new mistakes in setting.  
I bound this to my cost when my last  
Head. paper came out.

Please reply to this letter. I shall  
be in B'ham on the 2<sup>nd</sup> Feb.

Yr. great heart

H. J. Bleby



Bombay

24 Jan. 41.

Dear Madhava Rao,

I have just posted the corrected  
proof of our paper to <sup>registered</sup> you. I forgot to mention  
one point. The angles  $\gamma_0$ ,  $\phi_0$ , &  $\theta_0$  are  
correct as they stand in the proof. I had  
made a mistake when I wrote to you last  
time.

The print of  $\varepsilon$ ,  $\alpha$ , and  $\sigma$  will do, if  
there is nothing better to be done about it.

I have got Panikar's letter & will give it  
to you when I return. I am not satisfied with  
Panikar's solution. You might tackle this problem  
next. I shall only be satisfied when you get  
out the equations for the rotation of the sphere  
namely

$$\frac{1}{2} \dot{\sigma} = g_2 [\sigma - H]$$

out of the Dirac<sup>†</sup> equation with a  $g_2$  term. You  
will notice that  $H$  has to appear explicitly in the  
equation.

Please do not let the paper go through



without the corrections I have sent - about the scattering of positive & negative mesons. What we had there is definitely wrong.

$$\left\{ \begin{array}{l} \gamma^+ + p \rightarrow \left\{ \begin{array}{c} h_2 \\ \gamma^+ + \cancel{h} + \gamma^+ \end{array} \right\} \rightarrow \gamma^{+'} + p \\ \gamma^{\pm-} + p \rightarrow \left\{ \begin{array}{c} n \\ \gamma^- + h_2 + \gamma^- \end{array} \right\} \rightarrow \gamma^{-'} + p \end{array} \right.$$

The other case you can also verify.

Please also insert the para. about Heitler & Ma.

Yours sincerely

H. J. Bethe.



(1)

SI - Huns

Cotocamund

10 Nov - 41

My dear Madhava Rao,

There is one very queer point which Bann & I have come across. It is that  $d^{\text{nd}}$  order processes calculated on the basis of the theory (a) that all the negative energy states of the electron or other Dirac particle (spin  $1/2$ ) are empty is not the same as when calculated on the assumption (b) that all the negative energy states are full. (<sup>Dirac</sup> ~~vacuum~~ - hole theory). This result is so fundamental that I can hardly believe that all previous workers including myself have made the same mistake. As I see it, assumption (a) gives the Klein-Nishina formula, (b) does not. To my knowledge there is only one occasion on which the discrepancy has been noticed, namely the calculation of the  $2^{\text{nd}}$  order self-



energy of an electron by Weisskopf, in which (a) & (b) gave different results. If I am right in thinking that (a) & (b) give different results, the it would be a very severe blow to "hole" theory.

I would therefore like to have an independent check on this point and could therefore be very grateful if you would independently just confirm the difference in sign of one term between (a) & (b).

If you get into touch with <sup>Dr.</sup> Bain at the Indian Institute of Science, he will explain everything to you. I have written to him.

I shall be in Bham by the 15<sup>th</sup> & will see you a day or two after that.

With kind regards

Yr sincerely  
H. J. Shebher.



# UNIVERSITY COLLEGE OF SCIENCE

FROM

PROF. C. V. RAMAN, M.A., D.Sc. (Hon) . . ,

*Palit Professor of Physics*

92, UPPER CIRCULAR ROAD,

*Dated, Calcutta, the 12th Jan. 1922.*

Mr. B.S. Madhava Rao had a brilliant career in the Madras and Mysore Universities before he came to Calcutta, obtaining a first class in the I.Sc. and then standing first in the first class in the B.Sc. examination of the Mysore University. He was then deputed to Calcutta with a scholarship in order to continue his studies for the M.Sc. degree, and in his two years' work has fully sustained the reputation with which he came to this University. At the last M.Sc. examination in Pure Mathematics, he obtained a first class, standing second in the list, and his performance was in some ways even better than that of the man who stood first. Mr. Madhava Rao has also given proof of a distinct <sup>gent</sup> ~~line~~ for mathematical research, and he is, in my opinion, likely to distinguish himself abroad if deputed to Europe. I strongly recommend the grant to him of a foreign scholarship.

Palit Professor of Physics.



SIR C. V. RAMAN, Kt., F.R.S. NOBEL LAUREATE,  
M.A., HON. PH.D., HON. D.Sc., HON. LL.D.

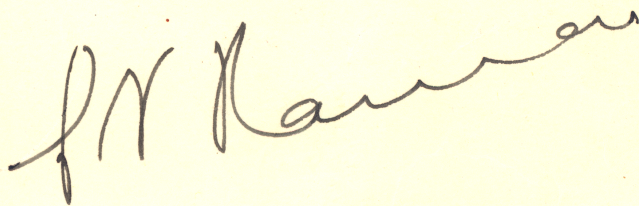
INDIAN INSTITUTE OF SCIENCE,  
~~HEBBAL P.O.~~ BANGALORE.  
Malleswaram P.O.  
30th April 1941.

My dear Prof. Madhava Rao,

I am returning herewith the translation of Tamm's  
paper so kindly lent by you.

Could you kindly return to me the number of Physic  
Review which you borrowed, as I wish to bind up the volume.

Yours sincerely,



Prof. B. S. Madhava Rao,

Department of Mathematics,

Central College, Bangalore.

Encl.



Sir C.V.Raman, F.R.S., N.L.,  
Director.

RAMAN RESEARCH INSTITUTE  
HEBBAL POST, BANGALORE 6

Ref: No. 726

28th September, 1955.

My dear Professor Madhava Rao,

I have just received your kind letter of the 27th September. As you are leaving so soon, it is not possible to convene a special meeting of the Council to place on record their appreciation of the very valuable services you have rendered during the many years you have been Secretary to the Academy. I shall however bring up this matter at the next meeting of the Council. Meanwhile, I wish to say how much I regret your departure from Bangalore which weakens the position of the Academy at its headquarters very much.

I hope you will have a good journey to Poona and will find your new job quite agreeable.

Yours sincerely,

C.V. Raman

155  
Prof. B.S. Madhava Rao,  
32, Kankanahalli Road,  
Basavangudi,  
BANGALORE 4.





सत्यमेव जयते

### MESSAGE

I send my greetings and good wishes to the International Colloquium on Zeta Functions and the South Asian Conference on Mathematical Education which are being organised by the Tata Institute of Fundamental Research in Bombay. This Institute has been recognised by the Government of India as the national centre for advanced study and fundamental research in mathematics and it is appropriate that it should hold this colloquium and conference.

Mathematics is supposed to be a dull subject, but it is increasingly recognised that it is of high importance in scientific developments today. Indeed, mathematical research has widened the horizon of the human mind tremendously and has helped in the understanding, to some extent, of nature and the physical world. It is a vehicle today of exact scientific thought. India has had the good fortune in the past to produce some very eminent mathematicians. I hope that the conferences that are being held in Bombay will foster this intellectual activity in the higher spheres of the mind and thus help in the progress of humanity.

*Jawaharlal Nehru*

New Delhi,  
5th February, 1956.



# THE INDIAN MATHEMATICAL SOCIETY

MALLESWARAM

M. T. NARANIENGAR, M.A.  
PRESIDENT

19<sup>th</sup> July 1932.

It gives me very great pleasure to bear testimony to the distinguished career of Mr. B. S. Madhava Rao, M.S. Acting Professor of Mathematics, College of Engineering, Bangalore. As a student of the Central College in the B.Sc. Classes, he made his mark. He easily secured a First Class in Mathematics in the B.Sc. Degree Examination and thereafter proceeded to Calcutta for higher studies. His diligence was rewarded at the Calcutta University in an even greater degree. He took First Class Honours in M.Sc. there and covered himself & the Central College with glory.

On his return to Mysore from Calcutta, he was awarded a University Research Scholarship by the Mysore University and attached himself to the Central College. After working in that capacity for a period, he was appointed a Lecturer in Mathematics in the Mysore University. Since then, he has been on the University Staff continuously and has risen to the present position of 'Acting Professor', by dint of intelligence and hard work. He has put in nearly ten years of service now and I have no hesitation in saying that, during these years, his knowledge has expanded considerably and that he has, with his keenness and eagerness as a student, kept himself



M. T. NARAYANARAO, M.A.

himself well posted with details of modern developments of Mathematical Science.

He has taken active part in the Research Work of the Indian Mathematical Society and of the Indian Science Congress.

I consider that he is a very fit candidate for a 'Foreign Research Scholarship' out of the Tatas Endowments, by virtue of his attainments and long record of brilliant achievement.

M. T. Narayana Rao,

President, Indian Math. Socy  
and Retired University Professor  
Central College, Bangalore.



# University of Mysore



RAO BAHADUR

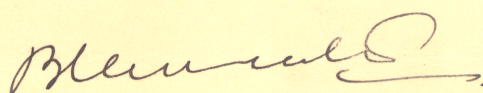
B. VENKATESACHAR, M.A.

PROFESSOR OF PHYSICS

DEPARTMENT OF PHYSICS  
CENTRAL COLLEGE  
BANGALORE

19th J u l y 1932.

Mr. B.S. Madhava Rao is well known to me as a student in the Physics classes and as a colleague. His academic qualifications have been adequately described by Sir C.V. Raman in his certificate. I may bear testimony to the high intelligence and Mathematical equipment of Mr. Madhava Rao. I consider him one of the best students that came under my notice. He is the right kind of person who should be deputed to European Universities for carrying on research.

  
Professor of Physics.





Max Born  
18.3.36.

by Cyril & Kate  
Sanger, London.



